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EVALUATING THE AUTOMATED CLEARING SYSTEM AT GHANA'S PORT: IT'S IMPACT ON EXPORT AND IMPORT

Business Economics and Tourism
2017

ACKNOWLEDGEMENT

I am most grateful to the Almighty God for helping me through this project successfully. A few people deserve special mention for their major contributions. I greatly appreciate the help and encouragement of the many people who have directly involved in this project.

My profound gratitude goes to the various persons from the selected institutions such as CEPS, GPHA, and other stakeholders at the Tema port for granting the interviews. I found it highly rewarding to meet and talk as well as sharing their expertise with me. I also express my gratitude to my supervisor, Satu Lautamäki

Invaluable assistance was also provided by Mr. Elijah Sofo who helped with the distribution of questionnaires to the respondents in Ghana as well as offered many helpful suggestions towards the project. For their valuable contributions, emotional support and generously sharing their knowledge, sincere thanks goes to Hilda Amo Henaku, Brenda Asare, Golder Asare, Eric Avevor and Diamond Asare.

Finally, great appreciation goes to my mum Janet Amenyah for her love, support and prayers all the time. Her enthusiasm and humor also kept me going, which was essential to the successful completion of this project.

It has been a great experience working with everyone who has been involved. May God bless you all.

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Vaasa, Finland

2017

TIIVISTELMÄ

Tekijä	Yayra Asare
Opinnäytetyön nimi	Automatisoidun selvitysprosessin arviointi Ghanan satamassa: sen vaikutus vientiin ja tuontiin
Vuosi	2017
Kieli	englanti
Sivumäärä	56 + 3 liitettä
Ohjaaja	Satu Lautamäki

Ghanassa on yksi Länsi-Afrikan alueen tärkeimmistä satamista, jonka merkitystä ei voida ylikorostaa. Tämä satama on tärkeitä tukipilareita Ghanan taloudessa. Ottaen huomioon Ghanan tavoitteen olla porttina Länsi-Afrikkaan, tulee satamapalveluiden ja -prosessien tyydyttää asiakkaiden, liikemiesten, maahantuojien ja maastaviejien tarpeet. Vuonna 2002 Ghanan Tema-satamassa otettiin käyttöön automatisoitu selvitysprosessi, sataman tehokkuuden ja paperittoman järjestelmän takaamiseksi.

Tämän tutkielman tavoite on tutkia Tema-sataman automatisoitua tulliselvitysprosessia ja arvioida sen vaikutusta rahtiselvitykseen. Tämä tutkielma käsittelee ongelmia ja haasteita tulliselvityksissä ja ehdottaa mahdollisia ratkaisuja edellä mainittujen ongelmien minimoimiseksi ja sataman palveluiden parantamiseksi.

Tutkielma pohjautuu kvantitatiiviseen tutkimukseen. Tuloksena saatiin selville, että hyvin luodun rahtiselvityksen täytöntöönpano oli kaikkien toimialan asianomaisten kannattama. Silti huomattiin myös, että sataman automaatiolla on vain vaikutus rahtiselvityksen kestoon, koska prosessi vaatii vielä paperiset versiot jo verkkoon lähetetyistä dokumenteista.

Tutkimuksen pohjalta suositellaan, että mekanismia muutettaisiin niin, että ei enää vaadittaisi paperidokumentaatiota useilta asianomaisilta, jos nämä asiakirjat on jo lähetetty elektronisesti. Tutkimus ehdottaa myös, että asianomaiset kuten CEPS ja muut valvontavirastot, jotka ovat tekemisissä sataman operaatioiden ja tullauksen kanssa, saisivat koulutuksen näihin prosesseihin. Viimeiseksi suositellaan, että henkilöstökoulutus ja rekrytointi arvioitaisiin uudelleen sataman tuottavuuden takaamiseksi.

ABSTRACT

Author	Yayra Asare
Title	Evaluating the Automated Clearing System at Ghana's Port: Its Impact on Imports and Exports
Year	2017
Language	English
Pages	56 + 3 Appendices
Name of Supervisor	Satu Lautamäki

Ghana has one of the most important ports in the West African sub-region. Its contributions cannot be overemphasized. The ports have become a major contributor to Ghana's economy. Given that Ghana's goal is to become the gateway to West-Africa, port services and processes will need to satisfy the needs of customers, businesses, importers and exporters. In 2002, Ghana introduced the port automation in Tema port as a mechanism to ensure efficiency and a paperless system.

The purpose of the study was therefore to examine the automated clearing system at Tema port in Ghana and assess its impact on cargo clearing. This research will address the problems and found out the challenges related to the custom clearance operations, as well as suggested possible solutions to reducing these problems to improve the services at the ports.

The case study design based on the quantitative research approach was relied on for this research. It was found out that a well-established system of cargo clearing was put in place and widely advocated to all the stakeholders involved in the industry. However, it was also discovered that port automation has had a minimal impact on the duration of cargo clearing cargo because of the constant demands for hardcopies of documents already submitted online.

It is therefore recommended that there should be a mechanism put in place which will not require the various stakeholders to submit hard copies of documents that have already been submitted electronically at the port. The study also recommends various stakeholders such as CEPS and other regulatory agencies with regards to port operations and custom clearance procedures to be given the necessary orientation about procedures involved in clearing goods at the port.

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Abbreviations

GPHA	-	Ghana Ports and Harbours Authority
GCNet	-	Ghana Community Network Services Limited
GRA	-	Ghana Revenue Authority
CEPs	-	Customs, Exercise and Preventive Services
GCMS	-	Ghana Customs Management Systems
MDAs	-	Ministries, Departments, and Agencies
MIS	-	Management Information System
ICT	-	Information Communication Technology
GIFF	-	Ghana Institute of Freight Forwarders
ASYCUDA	-	Automated System of Custom Data
GCB	-	Ghana Commercial Bank

1 INTRODUCTION

Ghana's ports play a major role in the economic growth of the country, with Tema port being one of the biggest ports in Ghana and handling about 80 percent of the country's national and exports and import. Of course one cannot dispute the fact that Ghana is dependent on trade because of the low cost of sea transport. According to the sector report on port development Ghana, 2014 Ghana has benefited from an increase in cargo inflow due to the political turmoil in Cote d'Ivoire (de Jong and Baas 2015). Despite the competition in regional seaports, Ghana ports offer investment opportunities. Really it is time for Ghana's ports to take the initiative of delivering better service to importers and exporters.

Ports play a very crucial role when it comes to international trade serving as logistics platform. They usually serve as points of loading and unloading international trade goods such as consumables, vehicles, and equipment. (Nsiah 2014). In Ghana the Tema Harbour is one of the most efficient ports in the shipping industry without which Ghana's economy will go into nose-dive and make the country to feel the negative impact of private enterprises. (Tawiah and Francis 2006). Although Ghana is blessed with two major big seaports, most imports destined for the second port are cleared at the Tema port. More as serving as a loading and unloading point, the port has generally become a major transshipment point for import for neighboring countries like Burkina Faso, Mali, and Niger. Richard Anamoo (2016) the director general of GPHA, described the ports as a safer place to do business, as prior to his comments most Ghanaians have described the clearing process at the port as unattractive.

The USAID deliver project report (2009) mentioned that the custom clearance processes are mostly controlled by country governments which change over time and can sometimes be difficult. Although there are policies, tools, and practices that facilitate these processes, yet reports from business owners, importers and exporters mention complex customs clearance which affects the process. Of course, failure by importers and exporters to acquaint themselves with these custom procedures can cause delays in delivery. According to the USAID West Africa trade hub

technical report (2010), Tema port is a major bottleneck on the import side where more than half of the traditional delay occurs during the port and custom clearance processes. On the other hand, export attracts less attention because few tax and duties are paid hence customs intervention is less needed.

Port clearance and customs operations in Ghana are faced with many challenges, which have prevented the ports, companies, and agencies from functioning smoothly (Asuliwonno 2011). Delays when clearing goods, bribery, and corruption have been some of the main hindrances of the port in providing better services to its customers. These practices have stained the image of the management at the ports, making it difficult to reach its goal of fighting corruption. Due to these factors challenging the port operations, management of the port through the government of Ghana undertook a number of policies and actions. To ensure efficiency the port restructured the customs operations in 1990 to meet international standards and thereby implementing the automated system (CEPS 2004). At the same time, the electronic data interchange was introduced, its function was to help integrate the ICT into the port's operations (CEPS 2004).

Port clearing in Ghana requires a lot of paperwork and thus requiring one to go through many processes. The port authority are responsible for the physical custody and handling of goods as they make their transition from the vessel to the temporary storage until they are delivered to the owner. (USAID deliver report 2009). In 2001 and 2002, the management of the port embarked on the gateway project to compare Ghana's ports to the ports worldwide (Asuliwonno 2011). This project includes the Ghana Community Network Services Limited (GCNET), which enables stakeholders to share data and information among themselves. The study seeks to analyze the port clearing process, its effectiveness as well unattractive proceedings importers and exporters encounter on daily basis.

1.1 Research Problem

The objective of the study is to assess the automated clearing system at Ghana ports with a case of the Tema port. This research will address the problems and find out

the challenges related to the custom clearance operations; as well as suggest possible solutions to reducing these problems to improve the services at the ports.

The clearing system at Ghana's biggest port has rather become a place for agencies to make profits from importers and exporters. Many concerns have been raised about the delays that occur during the clearing process at the port. In a meeting with the minister of trade and industry Dr. Ekwow Spio-Garbrah, some importers and exporters voiced out their daily frustrations they encounter at the ports. The importers and exporters complained the vigorous processes they had had to go through to clear their goods, stating 23 different points they encounter before being allowed to clear their goods. Illegal and indiscriminate charges by some clearing and forwarding agencies have become the norm of the day, contributing to the high cost of doing business at the ports of the country. (Business & Financial 2013).

Delays, bribes, irregular, and cost of transport severely limit the ability of importers and exporters as well as companies in Ghana to trade competitively in the world market. This usually results in unnecessary high consumer prices on imported goods, thus lower profits for exporters. (USAID West Africa Trade hub technical report 2010). Although it is not a big surprise that bribes and delays are usually the norms at the ports, it is a serious growth on the society. "Potential investors, importers, exporters and the ordinary Ghanaians are made to bear the brunt of the selfishness and greed exhibited by these officers and agents because prices are passed over". (Anas Aremeyaw Anas, 2011). On raising concerns at a meeting with the customs, exercise and preventive services (CEPS) the minister of trade and industry (MOTI), Dr. Ekwow Spio-Garbrah stated that "these frustrating systems could affect investor confidence". In his concerns, some importers, out of frustration, abandoned their containers at the ports. "I could count about 23 different points that importers have to go through to clear their goods". (www.graphic.com.gh).

The Ghana ports and Harbour Authority face challenges of weak infrastructure, and the non-availability of telecommunication network at the ports, which are the major hindrance of the system. These weak infrastructure development are posing

resistance to effective management at the ports. (Nsiah 2014). The issue of improving the quality of service to Ghanaians and foreigners at the Tema port is rather not new, although the port continues to go through the gradual process of enhancement, it continues to face challenges.

These problems being faced by the custom and clearing processes were due to the fact that port operations were not computerized or automated; the services and activities from documentation and the provision of information, clearance, and processing were done manually (Asuliwonno 2011). Amidst all these problems some agents have also devised ways and means of adding the cost of charges to the fees the importers have to incur. These have resulted in people who import goods into the country go through unspeakable frustrations. At least it could take a day to retrieve a container for examination, but there have to be delayed with paperwork, payment, and confirmation at the bank, clearance by CEPS and immigration officials which could take at least three days before one could clear the goods. (CEPS 2004). Based on these problems which hinder the port of realizing its goals of becoming the gateway to West Africa, some objectives have been stated below to identify and address the situation at hand and determine the way forward towards improving the quality of service at the Tema port.

1.2 Research Objectives and Questions

As having the goal of becoming the gateway to West Africa, it is expected that the services and processes provided at the port will give a satisfaction to its customers, traders, importers and exporters. Hence the need to examine the processes the automated clearing system of the port of Tema, its impact on the country's import and exports. Specifically, the research seeks to achieve the following objectives of the study:

- To identify and examine the procedures involved in clearing goods at Ghana's ports
- To identify and investigate the chronicle challenges in the clearing system identified

- Evaluate the impact of the identified procedures and challenges on imports and exports at Ghana's ports.
- To recommend mechanisms of improving the system of clearing goods at the port.

The study which seeks to evaluate the automated clearing system at the Port of Tema is motivated by the following questions:

- What are the procedures for clearing goods at Ghana's ports
- What impact do these procedures have on imports and exports
- Do shippers, importers and exporters face challenges when clearing their goods at the port? If yes, what are they?
- What measures could be put in place to improve the clearing system and process at the port of Tema?

1.3 Significance and Limitations of the Study

The importance of this study is to evaluate the automated clearing system at Ghana's ports, specifically the Tema port and to examine the automated clearing system has had an impact on imports and export, since its introduction. The Ghanaian economy is dependent economy on imports, therefore there is the need for a review of its custom clearance procedures to be undertaken at the port of Tema (GPHA 2006).

The study will also serve as a source of literature to the industry and various companies involve in the daily operations at the port. To add, the study is important because it discovers and exposes the impacts the GCNET and the paperless systems has had on custom process output as well. The effective implementation of the GCNET and paperless system as defined in the findings will help reduce corruption and increase output. It also adds to the numerous works related to the topic and still serves as a source of reference for future studies. The findings of the research will help the port management and other stakeholders to realize the effectiveness of port operations.

Furthermore, the study can serve as a learning platform for stakeholders, agencies, companies, importers and exporters when clearing goods at the port, helping to enable a smooth clearing system. The findings will also provide some strategies for improving the efficiency of customs clearance at the ports. The study will add to the body of knowledge in different ways since its aim is to evaluate the automated clearing system at the Tema port.

Despite the available information about the topic, the research faces some limitations which are stated below:

- The management of the Tema port unwillingness of granting interviews.
- Limited information about the topic is available, making the research difficult
- The unwillingness of respondents to give information.

1.4 Structure of the Study

The study is structured into five chapters. The first chapter looks at the general background of the study, the research problem, the objectives of the study, significance of the study, and also the research limitations. The second chapter reviews port operations and custom practices.

The methodology research is explained in chapter three in detail. The chapter gives a highlight of the approach and methodology used, explaining the sources of data or methods used in collecting the data, as well as the research design framework. Chapter four reviews the data collection and analysis and discussions of the findings. Lastly, chapter five presents the summary, conclusions, and recommendations based on the research findings.

2 PORT OPERATIONS AND CUSTOM PRACTICES

The chapter focuses on the various sources of literature written about port clearance and clearing procedures especially in Ghana. The review of existing literature will help in analyzing the main concerns of the automated clearing system at the Tema port in Ghana. The chapter, therefore, begins with the history of the port of Tema.

2.1 Background study of Tema Port

About 29 kilometers east-northeast of Accra, (the country's capital) lies the Tema port. The port is located on the shores of the Gulf of Guinea in the southeastern part of Ghana, being one of two deep-water ports in Ghana, it is said to be the largest seaport in the country. William Halcrow and partners of the United Kingdom began the construction of the port in 1954, on the order of the colonial administration. The proposal was basically to set up an aluminum business driven by a hydro-electric station of the Volta River basin. Construction advanced enough in 1958 to allow the first cargo vessel to dock. The port was later opened and regular traffic started after the commissioning in January 1962 (GHPA 2016).

As the biggest port of two seaports in Ghana, it handles 80 percent of the country's national exports and import. The port covers a total area of 3.9 million square meters with water enclosed area about 1.7 million square meters (Portside 2015). The port also has coverage storage area of 53,270m and 97,200m open storage. Bunkering services and dry dock facilities can also be found at the port (Owusu-Mensah 2007). The port offers a wide range of services to industries and companies, producing products such as petroleum, cement and food items, iron, steel, aluminum, and textiles. The country's main export, cocoa is shipped from the port (Portside 2015).

2.2 Port Development

Inland transport was generally poor by the middle ages, the use of the sea as a highway led to the development of coastal settlements based on seaport's activities in Europe. The settlement's location reflected some natural advantages, both land site and water site which resulted in the misuse of opportunities for water-borne

transport. These could be as much dependent on cultural and political factors as well as geographical nevertheless the development of more accurate navigation systems, which assisted the internationalization of trade were increased by these opportunities (Palmer 1999). This resulted in some of these settlements becoming city ports.

Around 2300BC the world's first tidal dock is believed to have been built at Lothal throughout the Harappa civilization, on the Gujarat coast near the present day Mangrol Harbour. With time sea transport increased and maritime activities began to grow with different takeover (UNCTAD 2008). The growth and importance of the development of seaport have led to the seaport development in Ghana.

2.3 Port Development and Customs Practices in Ghana

Seaports development in Ghana began long before the 15th century when trade brought about the interaction with the outside world through ships and ship vessels that landed at the various sites along the coastal towns (Asuliwonno 2011). However, during the early parts of the 16th century, ports operations started with the construction of the breakwater in Accra (GHPA 1991).

Meanwhile, the importation of goods through the use of ships began on a large scale in Ghana as the ships used to dock at the Harbours of Prampram, James Town, Cape Coast, Keta, Ada, and Sekondi. To ensure safe delivery of goods to the importers, some individuals helped in transporting the goods from the ships to the shores (Nsiah 2014). "The work of these individuals served as a precursor to the clearing and forwarding business in Ghana" (Nsiah 2014)

On the other hand, freight forwarding was introduced in the country by the Gold Coast colony after the British government burdened customs duties on imported and exported goods in 1839. All goods that were imported into the Gold Coast attracted a duty of 0.5% in the year 1850. In addition, export duty was also introduced thus, causing the international trade of the Gold Coast to increase. As a result, restrictions and prohibitions were imposed on the goods. In order to meet the international requirement, all goods that entered international trade were given

detailed description and classification. To be able to meet all the requirement, the customs authority developed goods clearance procedures also known today as the customs procedures, which became difficult and technical (Nsiah, 2014).

2.4 Importance of Ports to the development of the Economy

Seaports are very important to the development of the economy of every nation in this era hence to cope with the growing trend in world trade, ports in every country will no doubt continue to play a very crucial role in the provision of the cheapest mode of transport to nations. In modern times, the world's highest transport load is carried out by maritime transport and this makes seaway transport economical and operative transportation systems as compared to other modes of transport in terms of load carriage. Seaway transportation has a lower energy consumption rate (which is more or less two times lower) than railway and (ten times lower) than highway transportation (Berköz & Tekbao 1999).

Close to 80% of the world's merchandise trade is carried by ships, making the maritime transport by far remain the most common mode of international freight transport. Maritime or sea transport is the anchor to facilitating international trade, offering the most reliable and economic way to move goods over long distances. Large volumes of trade goods can be carried by ships which only requires some infrastructure investments at the seaports (African Development Bank 2010).

Similarly, seaports provide employment to the community as they do not function as economic but also for social purposes. Some economic benefits include: job creation and increased visitor spending; improvement of the city's image due to the importance of cruise tourism; on the other hand, there are also some environmental benefits, for instance, the re-use of docks areas as 'brownfield' sites with particular advantages in terms of location (Millsaugh 2001) as cited by Broni (2014). Seaports are also important for the support of economic activities in the hinterland since they act as a pivotal connection between sea and land transport.

In addition, seaports provide employment possibility for people in the country. With systems such as port automation and port operations being introduced, this requires

engineers and IT personnel to operate the systems and as such creates jobs for people. Some seaports are capital intensive and require a lot of investments, despite this a large proportion of people are employed by seaports (GPHA 2008). On the other hand as the port and maritime sector continues to grow there is the demand for job opportunities. For instance, the development of port infrastructure in the east and west of Lagos and south-east Nigeria has created job opportunities. In Dakar, the Senegalese plan for port development with 20 projects of over € 1 bln has increased the employment rate in the country (Hell 2015). The GPHA employs approximately 20,000 people yearly through seaports (GPHA 2002)

2.5 Legal Structure of Port Operations and Customs Practices

In Best Practices Report on Modernization of the Customs Code, ACP Group (2016) states that "All customs administrations operate in a complex national and international legal and regulatory environment that influences the form and content of the national customs Law". The report further mentioned that the laws as expected are to reflect the functions that the customs administration is likely to carry out for the government, which includes a collection of revenue from imports and exports and facilitation of international trade (ACP Group of States 2016)

Customs plays a critical role in trade operations and revenue collection, which directly affects the private rights and responsibilities of citizens. Nevertheless, customs is also expected to play an active role in protecting society and national security. Thus, it is obligatory for customs to have a solid legal framework within which duties can be cleared (De Wolf and Sokol 2005).

“Without an effective legal framework that guarantees transparent, predictable, and prompt customs procedures, the international private sector will find it highly cumbersome to conduct business with or to invest in a country in a competitive international business environment”(De Wolf and Sokol 2005).

In Ghana, seaports are under the administration of the Ghana Ports and Harbours Authority (GPHA). With its effective legal framework, it is responsible for the constructing, development, handling, sustaining and operating of seaports in Ghana.

GPHA is currently the landlord or authority which is responsible for providing all the needed infrastructure of the port. This legal body controls the marine approach canal, navigational supports, basins, and quays of the ports (Asuliwonno 2011).

2.6 Legal Structure of Port Operations in Ghana

According to the Ghana Ports and Harbours Authority Law 1986, and PNDC law 160, GPHA is obliged to plan, build, develop, manage, operate, and control Ports in Ghana. The act instructs GPHA to do the following:

Provide in port facilities as deemed for the efficient and proper operation of the port

Maintain the port facilities, extend and enlarge any such facilities as it shall deem fit as well as regulate the use of any port and port facilities

Maintain and deepen as necessary the approaches to navigable waters within and outside the limits of any port, and also maintain lighthouses, beacons and other navigational series and aids as required.

Carry on all the business of loading or unloading cargo and using lighterage services.

GPHA is also expected to generally discharge any other functions which are necessary or incidental to the foregoing. These includes the following:

Supervise stevedoring lighterage and container services, where these are provided by persons other than the authority,

Operate tugs, dredgers and other craft for towage, salvage, fire prevention and protection of life,

Enter into any agreement with any person.

2.7 Custom Practices and Port Clearing Procedures at Ghana Ports

Clearing cargo in Ghana through seaports involves dealing with a number of logistics service providers and government organizations in order to fulfill all

contractual and tax duties that might be connected with the shipment. These bodies include GPHA, CEPS, Shipping Agents and Destination Inspection Companies. Customs House Licensing Regulation (Legislative Instrument 1178) of 1987 instructs all importers with exception of declarants to involve the services of licensed Customs House Agents for the clearing of cargo at freight stations in Ghana (Dest Logistics 2016).

There are various stages of customs clearance processes at Ghana's seaports. The clearance process starts with the valuation of cargo, declaration of cargo data on to the GCNET, payment of duty and other relevant cargos, verification at the compliance section of CEPS, release by the shipment agent, delivery by GPHA/AVIANCE and CEPS physical examination or scanning of cargo before the cargo or goods are allowed to exit the port (Dest Logistics 2016). With cargo clearance, the main actors involved at the port are the shipping lines, CEPS, Destination Inspection Companies, Clearing Agents and Port Authority (Asuliwonno, 2011). The procedures within which these institutions operation are as follows:

The use of clearing agents or customs brokers to clear goods or cargo by importers;

The destination inspection companies verify the documents and issue a final classification and valuation report (FCVR) stating the value of the consignment and duty owed;

The shipping lines bring in cargo and release the necessary documents of agents, which includes

- Bill of laden;
- Parking list;
- Invoice; and
- Freight receipt.

CEPS evaluates various items in different categories (importations without invoices, used items, and commercial items found in personal effects) and ensure

that the appropriate duty is collected; and finally GPHA facilitates the physical clearance process and ensures collection of rent and handling charges.

2.8 Challenges of Port Operations and Customs Practices in Ghana

Ghana seaports are faced with numerous challenges and problems, which prevent the ports from operating smoothly (Asuliwonno 2011). The increase in international trade over the past years has resulted in inadequate port capacity and infrastructure to handle the teaming number of vessels that arrive at the port of Tema (Kingsley 2014). According to the USAID report, the port of Tema is faced with low landing place because of a lack of gantry cranes and this is affecting productivity. With the increase in the number of container volumes, carriers are forced to wait several hours for docks, in turn imposing bottleneck extra charges on shippers (USAID 2005).

Another important challenge is the lack of infrastructure and adequate facilities at the port. This has affected port operations with regards to the inter-feeder transfer of cargo and services, cargo consolidation, cargo storage, cargo manipulation, cargo packaging, and processing. Congestions at container terminals cannot be ruled out, thus increasing vessel traffic and delays in cargo flow (Asuliwonno 2011).

In addition, slow adaptation to modern technology has made it difficult for port operations to be effectual, in areas of port technology, port management, port labor and customs practices. Managers and staff of the port administration are used to the old system of manual work where paperwork is the order of the day. This has hindered the port to operate efficiently and diversely in port management and investments. Port technology has become necessary in recent times to ensure efficiency and effective operations at the port (Asuliwonno 2011).

2.9 Port Automation and ICT

Appels and Struye de Swielande (1998), explained that innovation and developments in IT and communications in recent years will have a huge impact on customs clearance activities. They further explained that “Technology now makes it possible to capture customs data at the front end of the business process” (Appeals

and Struye de Swielande 1998). As being one of the biggest seaports in the region, it is time for maritime security solutions to be technologically advanced and integrated into the operations of customs clearance in Ghana (Broni 2014).

In recent times researchers and practitioners have been concerned by the difficulty of using the latest developments of ICT tools for freight transportation management effectively and efficiently. Precisely the ICT tools of the modern era help to produce, maneuver, store, communicate and disseminate information. Not forgetting the fact that ICT helps officials to know the state of the system thereby making it easy to manage and change on-line paths, vehicles flows, traffic indices, orders, and deliveries (Broni 2014). To be able to operate such choices, there is the need for an appropriate decision based on detailed models that can track the state of change in various system components. This, therefore, will determine the performance indices and real-time management (Ramstedt and Woxenius 2006) as cited by Broni (2014)

In acknowledgment of the essential role that ICT plays in modern customs administration, De Wolf and Sokol (2004) explained the need for contribution in proposing an innovative ICT-based solution that will take into account the importance of the selection and application of appropriate and effective technological solutions for customs and security operations. The assumption is that the introduction of this new technology systems does not completely solve the system irregularities of the current situation.

In the USAID delivery report (2006) De Wolf structured the benefits of using computerized processes in customs administration which are as follows:

The use of ICT gives a better control over international consignments;

Computerized systems improves the control over exemptions and suspension;

Through the use of ICT systematic risk management approach is possible;

Helps in better management of information systems (MIS);

- Reduced officer discretion integrity benefit;
- Increased predictability for traders;
- More efficient revenue collection and accounting;
- Reduces cargo clearance times for the discharge of customs formalities;
- Increase in transparency and predictability for the business sector;
- Provides more accurate and timely trade statistics;
- Reduces opportunity for inappropriate exercise of officer discretion;
- Uniform application of customs and other border-related legislation.

Ghana's automated system was introduced in 2002 since the importance of ICT cannot be overlooked in this digital era. Due to the numerous benefits of ICT to the modern community as stated by De Wulf (2004), the Ghana's Single Window and paperless system were introduced, (Broni 2014).

2.10 Ghana Community Network Services Limited and Paperless System

The GCNET electronic clearance system was introduced in September 2003 as joint venture Company with foreign stakeholders (Société Générale de Surveillance with 60 percent, Customs Services with 20 percent, the Ghana Shipping Council with 10 percent, and two local banks, each with 5 percent). This implementation has been one of the most effective private-public partnerships Ghana has ever had with four countries involved: Ghana, Mauritius, Singapore, and Switzerland. (Piaggese, 2011). The new system is an information and communication technology solution provider that seeks to nurture trade development and facilitation in the country. It was mainly designed for shippers and agents as it cuts down the clearance time considerably and helps in exchange of trade information online (Nsiah, 2014).

Prior to its implementation, there was a situation where each agency requires a set of documents that must be submitted which are mostly not shared with the trading community (see Figure 1). These process involved a lot of paperwork and multiple

copies are also required, as often data is duplicated and recorded for additional processing. These made the process time consuming and costly. At least 25-32 stages are needed to be undertaken before a consignment could be cleared as reported by various studies (De Wulf, 2004).

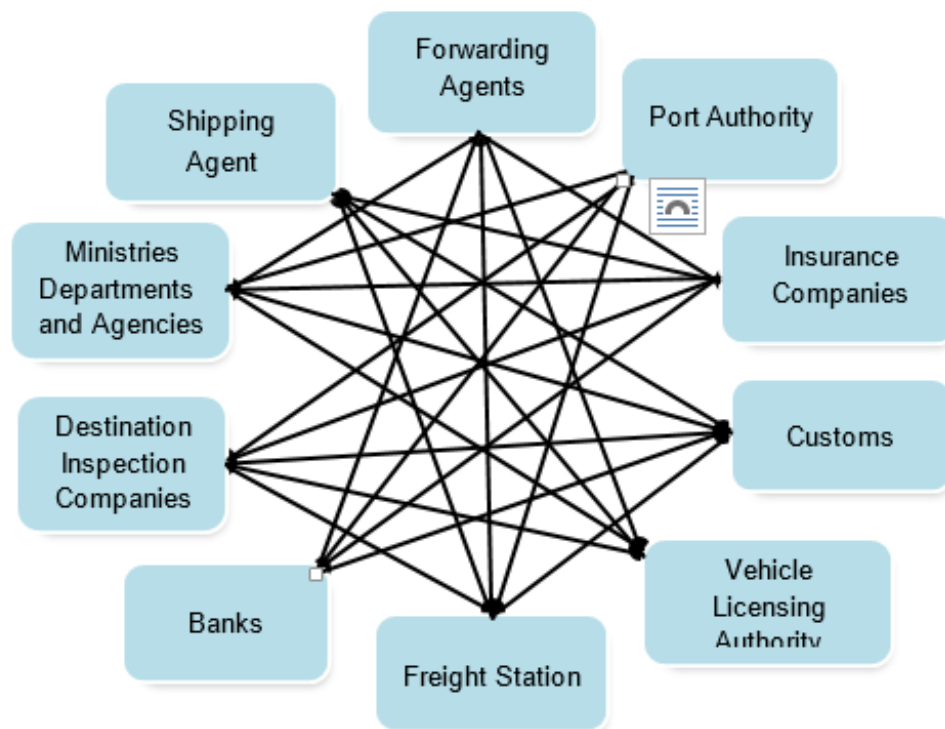


Figure 1. Situation before GCNET (Nsiah 2014).

Trade operators were indebted to go from one agency to the other to chase documents being processed, as these agencies were "neither networked to communicate" with one another or lack a common database. De Wulf (2004) further argued that the process was time-consuming and no transparent method of an audit is provided. This resulted in statistical information not precise and as such delays occurred, whilst providing agencies and individuals involved with the opportunity to accept bribes (extra money) to speed up the process or even to jump the queue. These hindered the economy from getting the competitiveness it strives for due to lack of transparency in the audit process.

The GCNET situation in figure 2 shows how the community interconnects totally, the vision was put in place in Singapore to demonstrate the objectives of the GCNET.

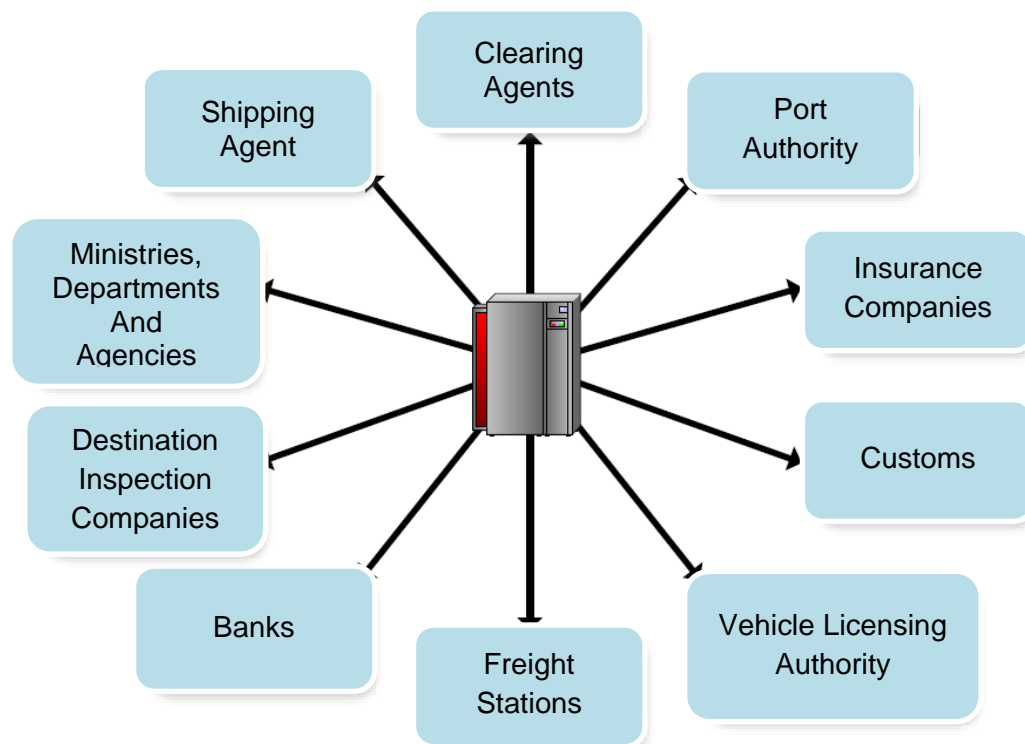


Figure 2. GCNET Situation (Nsiah 2014).

The process suggests that the trader submits one document to the trade net (GCNET), which contains the information which is required by all the agencies involved, to either fulfill their regulatory function or to provide the necessary permits. The GCNET then send the information to each agency respectively; the agencies responds immediately and request for further information as required. The objective of all traders being integrated into one community is to reduce the relatively cost of transaction for the trader and makes operations in the institutions more efficient and effective (De Wulf, 2004).

2.10.1 Objectives of the GCNET

Ofori's report (2013) stated the following as key objectives of the GCNET:

To improve the speed of customs clearance thereby quickening port clearance processes. This will increase maritime business at the international level and then boost productivity which improves economic growth (Ofori 2013).

The GCNET also protects Government revenues from shipping and maritime operations. The system stores information on all trade transactions on a single window system which is less corrupt as compared to the manual system (Ofori 2013).

The system reduces the malpractices associated with export and import trade by improving the transparency of shipping and maritime business. The right amount of taxes and duties are paid to the appropriate sources, charges and duties are also calculated automatically which results in trust and transparency (Ofori 2013).

Another objective of the system is to reduce the cost and delays that traders encounter on daily basis in clearing consignments at the port. The manual system which requires a lot of paperwork from one agency to the other was too cumbersome. Importers and exporters are required to pay penalties and unnecessary charges before clearing their consignments. The GCNET, therefore, introduces a smooth and speedy clearance system which minimizes cost on clearing goods (Ofori 2013)

2.10.2 Ghana's Paperless System

In collaboration with the Customs Division of the Ghana Revenue Authority (GRA), the Ghana Community Network Limited (GCNET) which is the e-solutions provider to the government and which developed and also deployed the Ghana customs management system (GCMS) introduces the paperless clearing system across all the customs entry points in the country in 2004. The purpose was to ensure that all Ministries, departments, and agencies (MDAs) that issue permits before

goods are imported into the country are linked into an electronic system. (Spy Ghana 2016)

The paperless clearing system means that all parties involved in the evaluation process, classification of imports, insurance of permits, settlement of cash and all other activities relating to the clearing process will be web based which will ensure a unified system without much paperwork. Declarants can still print copies of their declarations and also obtain printed receipts for duties/taxes, fees or port charges paid even though the GCNET seeks to eliminate the paper documents relating to trade. (Spy Ghana 2016)

The paperless system has the capacity to eliminate all unauthorized and unqualified persons (usually referred to as Go ro operators) who act as clearing agents at the port. To ensure a transparent and smooth process, clearing agents are not allowed to give their user details to such persons.

The introduction of the GCNET operates an i-transit service, which fixes electronic tracking devices on cargoes on transit. This system will help the GRA to track cargoes on transit and ensure that they leave the shores of Ghana to their intended destinations.

3 RESEARCH METHODOLOGY

This chapter discusses the approach and methods used in the research. This includes the various methods available, and in particular, introduces the methods used in the study. The chapter looks at the study area, research design used, the sampling size and technique as well as model of data analysis. An explanation of sources of data and the reliability and validity of the study is also stated in this chapter.

3.1 Research Design

Burns & Bush (2003), defined research design as a “set of advance decisions that makes up the master plan specifying the methods and procedures for collecting and analyzing the needed information” De Vaus (2001) also points out that research design is not just a work plan but its purpose is to make sure the evidence acquired enables us to answer the initial question as clearly as possible. The researcher may choose to utilize any research method (qualitative or quantitative or both).

3.1.1 Quantitative Research Design

Quantitative research is defined as a research approach that put emphasis on quantification in the analysis and collection of data (Bryman & Bell 2015). Quantitative research usually focuses attention on measurements and amounts (more and less, larger and smaller, often and seldom, similar and different) of the characteristics displayed by the people and events that the researcher studies (Murray 2003). The objective of the quantitative method is to develop and employ models based on calculated methods, assumptions and theories involving the nature of an ICT phenomenon (Perumal 2014).

There are different types of quantitative including experimental research, structured questionnaires and correlation methods. The quantitative method is also very popular with the testing of hypothesis which is more scientific on measurement. Structured questionnaires are the most popular type of quantitative research which usually requires the researcher to use a population sample and both non-probability and probability method of sampling.

The quantitative research approach was used for the study. This was because the quantitative method allowed the researcher to rely on statistical formula or numerical data to interpret the sourced research data for future estimation of events and quantities. Wyse (2011) therefore explains that quantitative research is used to quantify problems by way of generating numerical data or data that can be transformed into useable statistics.

Accordingly, quantitative research is used to measure attitudes, opinions, behaviors and other distinct variables and generalized results from a larger sample population. The quantitative research approach, therefore, enabled to obtain data from the participants through interviews and observations, as well as presenting and analyzing the data collected as descriptive narratives with bar charts and tables. This is because quantitative research uses quantifiable statistics to formulate facts and uncover patterns in research (Pilot and Hunger 2007).

3.1.2 Qualitative Research Design

Qualitative research refers “to all non-numeric data or data that have not been quantified and can be a product of all research strategies” (Saunders, Lewis & Thornhill, 2009, 511). It is usually a multimethod which involves case study, personal experience, life story, interview, observational, interactions, and visual context (Turkson 2011). Mack, Woodsong, MacQueen, Guest, and Namey (2005), stated that qualitative research provides information about the ‘human’ side of an issue that is emotions, opinions, and relationship of individuals. Hence when used alongside quantitative methods, qualitative research can help the researcher to understand the difficulty of a given situation and the implications of quantitative data. One advantage of qualitative research is that it is more flexible, making the interaction between the researcher and participant very natural (Mack et al 2005). In this research, also interviews as qualitative research method were used to support the findings from the quantitative survey, which was the main data collection method.

Saunders et al (2009) distinguished between quantitative and qualitative data as shown in Table 1.

Table 1. The distinction between quantitative and qualitative data (Saunders et al. 2009, 482).

Quantitative data	Qualitative data
Based on meaning derived from numbers	Based on meanings expressed through words
Collection results in numerical and standardized data	Collection results in non-standardized data requiring classification into categories
Analysis conducted through the use of diagrams and statistics	Analysis conducted through the use of conceptualization

3.2 Population

“A population is any group of individuals who have one or more characteristics in common that are of interest to the researcher” (Singh and Nath, 2007). Singh and Nath further stated that population may be individuals involved in a particular group type, or may be a restricted part of a particular group. In other research, Turkson (2011) argues that in order to draw a sample there is the need to know the number of people in a population, and how this total number is made up people you might be interested in falls into different subgroups.

The population of the study constituted of all stakeholders at the port of Tema who use the port of Tema in their operations on daily basis. According to Adam (2016), a population is a well-defined-fined collection of individuals with one or more characteristics in general, that is of interest to a researcher. Thus, it is for the benefit of the population that researches are done. However, Cox (2013) has the view that there are two types of research population, namely target and accessible population.

3.2.1 Target Population

The target population for this study covers all the stakeholders at the port of Tema. They include freight forwarders, importers, Ghana ports and Harbours Authority, Ghana Community Network Services Limited, Customs Division of Ghana Revenue Authority, Master Porters, Customs Exercise and Preventive Services (CEPS), Clearing House Agents, Security Agencies/Companies. Terminal Operators, Ministries, Department, and Agencies (MDAs) and shippers. The choice of targeting stakeholders at the port was to help to generalize the conclusions. Cox (2013) defines target population as entire group or unit of individuals for which the findings are meant to generalize. He further states that target population, which is also known as theoretical population, generally has varying characteristics.

3.2.2 Accessible Population

Equally it is acknowledged that there is a possible or practical difficulties in accessing and obtaining data from all the members of the target population due to factors like unwillingness, lack of sincerity due to fear and confidentiality or loss of personal contacts was acknowledged. Therefore, the people who could be reached for information in this research formed the accessible population consisting of four hundred and ninety-four (494) stakeholders at the port of Tema. Cox (2013) explains that the accessible population also known as the study population, is the population researched to which conclusions can be applied. He has the view that researchers draws their samples from the accessible population.

3.3 Sample and Sampling Procedure

Sampling according to Turkson (2011) is a careful choice of a number of people from whom the sample provides data. Adam (2016) restates that sampling is the procedure a researcher uses to gather people, places or things for study. The sampling method used for the study is the purposive sampling technique. Turkson (2011) further explained that using part of the population is considered economically reasonable and saves time and resources. Consequently, not all the members of the research population were sampled for the study.

The purposive sampling technique is used in sampling seventy-three (73) respondents who constituted stakeholders at the Tema port. This constituted of twenty (20) freight forwarders, twenty (20) shippers (importers and exporters), ten (10) shipping agents, fifteen (15) clearing agents. The remaining are GPHA, GCNet, GCB, Ecobank, GIFF representing three (3) of respondents and five (5) respondents representing Revenue Authority- CEPS (See Table 2). Lewis and Sheppard (2006) explained that with purposive sampling the researcher decides what needs to be known and set out to find people who can and are willing to provide the information by virtue of their knowledge and experience. Stakeholders such as GPHA, GCNet and Ghana shippers' authority, Master Porters, CEPS, MDAs, Shippers, were readily identified, selected and interviewed. This process of sampling involves identifying the members of the various bodies and communicating with them.

Table 2. Sample Size, and Institutions (Business Ghana Directory 2017).

Name of Institution	Sample Size
Freight Forwarders	20
Shipping Lines/Agencies	10
Clearing House Agencies	15
Shippers (Importers and exporters)	20
Others (GPHA, GCNet, GCB, Ecobank, GIFF)	3
Revenue Authority- CEPS	5
Total	73

3.4 Sources of Data

Both secondary and primary data sources of gathering information are used for the study. Primary data can be said to be information gathered for the first time which is used to solve problems under investigation (Lamb, Hair and McDaniel 2010,

299). The key benefit of primary data is that it answers to research questions specifically that secondary data cannot answer and as such, they are more consistent since they are from the original sources and are collected for the purpose of the study (Saunders 2000). The instruments used in collecting the primary data for this study from staff of GCNet, exporters, and importers, Ghana ports and Harbours authority, freight forwarders, and shipping agents, CEPs and other stakeholders at the port were interviews and questionnaires.

Secondary data was obtained from annual reports, articles, journals and newsletters of the various institutions and also the volume of traffic handled at the Tema port. The purpose for using secondary data collection is that, if adequate data is available, less time and effort is required to collect information unlike primary data (Kuiper & Clippinger 2012, 313).

3.4.1 Interviews

A semi-structured interview guide was prepared and used for the interviews conducted with the various stakeholders who use the port of Tema on daily basis. (See Appendix 3). The semi-structured interview format according to Mark and Janina (2009) enabled the researcher to develop a list of open-ended questions that created room for follow up questions and discussions based on the trends and exigencies of the time during the interviews. Hence the open-ended questions allowed respondents the opportunity to really express their views on the questions pose. This is because open-ended questions are exploratory in nature and allows the respondents to provide any answer of their choice without forcing them to select from concrete options (FuirdSurveys Team 2013).

The interviews were conducted with seven interviewees, with each interviewee representing one of the stakeholder agencies operating at the Tema port. The stakeholder agencies represented were GPHA, GCNet, GCB, Ecobank, GIFF, CEPS and Freight Forwarders. On the average each interview lasted for a duration of twenty minutes. However three follow-up calls were made intermittently to the representatives of freight forwarders and CEPS after their prearranged interview session to seek further clarification where needed. This calls lasted for

approximately five minutes. The interviews were conducted between the periods of March and mid-April.

3.4.2 Questionnaires

A number of close-ended and open-ended questions were prepared based on the objectives of the study. The questionnaire is designed with a combination of open and close-ended questions. The open ended questions comprised multiple choice answers from which the respondents were to select their preference. In a clearer term open-ended questions have explicit options for respondents of questions that require a simple yes or no answers (FuildSurveys Team 2013). The information gained from this format allowed the researcher to categorize the respondents into groups based on options they selected.

Open-ended questions on the other hand allow the respondents to freely express their views on the questions pose. As stated earlier FuildSurveys 2013, shares the view that open-ended questions are exploratory in nature, allowing the respondents to provide any answers of their choice. The open ended questions dominated the format for the questionnaires.

In all eighty questionnaires were distributed and seven three were received from the respondents. The questionnaires were distributed in January, by the second week of March the seven three questionnaires were received.

3.5 Method of Data Analysis

The data collected for the study is analyzed in a descriptive manner. Both Excel Spread Sheet and SPSS software were used to analyze the data gathered from the survey. The responses were then put in categories and then analyzed and presented using quantitative tools such as averages, frequencies, cumulative frequencies, and percentages. These are also presented in table and charts.

The descriptive data is analyzed and interpreted into themes and information relevant to answering the research questions before conclusions are drawn. Turkson (2011) deduce that presenting research findings thematically ensures that the

findings are structured to follow a logical pattern. Polkinghorne (as cited by Webster 2010) states that themes may be drawn out by inference and interpretation by the researcher. Thus, the story of each individual respondent, which at times were narrated in an illogical and difficult to follow manner was presented and discussed in a way that constitutes a meaningful whole and allowed the researcher to identify inductive themes embedded in the story (Bryant 2006).

3.6 Reliability and Validity

Reliability and validity define how accurate a research is. Both factors are dependent on measuring the quality of the research. Reliability is the “degree to which measures are free from error and therefore yield consistent results”. (Thanasegaran 2009). Therefore, an instrument or measurement device is considered reliable if it constantly produces the same score as individuals or objects. Hence the respondents must respond in the same manner to research questions which are identical.

Thanasegaran (2009) further explained that if a measure is valid, then it has achieved its purpose of measuring and does so cleanly without accidentally including other factors. The questionnaires must be well understood by the respondents since they have no close contact with the researcher. This is to ensure the probability of obtaining reliable and valid answers.

The measuring tool used in this study is the questionnaires given to the respondents. A sample questionnaire was sent out to one respondent to ensure that the questions were easy to understand and by so doing correct some common errors and vague statements were corrected. The pretesting process helped to increase the validity of the study. The research is deemed valid and reliable as the response rate was high and answers given tallies.

4 PRESENTATION AND DISCUSSION OF FINDINGS

This section reveals the background data of the respondents in relation to their employer or company, role of company in Tema Port operations, and the process involved in cargo clearing, amongst others. The challenges associated with automation at the port is also discussed. The data collected is analyzed using the statistical package for social sciences (SPSS) in the form of frequency table for easy interpretation and understanding.

4.1 Procedures Involved in Clearing Goods at Ghana's Ports

To obtain relevant data, questionnaires and interviews were conducted with a number of respondents and interviewees respectively. Statistical distributions of the respondents and interviews were compiled in relation to the institution or companies that the respondents belong to (as seen in Table 3).

Table 3. Summary of institution of respondents.

PLACE OF WORK	NO. OF RESPONDENTS	PERCENTAGES (%)
Freight Forwarders	20	27
Shipping Lines/Agencies	10	14
Clearing House Agencies	15	21
Shippers (importers and exporters)	20	27
Others (GPHA, GCNet, GCB, Ecobank, GIFF)	3	4
Revenue Authority-CEPS	5	7
Total	73	100

It was found that 20 respondents, representing 27% of the respondents were Freight Forwarders, 10 respondents representing 14% work with Shipping Lines/Agencies, with 15, 21% respondents being Clearing House Agents. Shippers were 20 representing 27% respondents work with 3 others (GPHA, GCNet, GCB, Ecobank, GIFF) represent 4% of respondent. The Revenue Authority- CEPS were the last

category of respondent who were 5, representing 7% of respondents. From the statistical distributions of in Table 3, it is apparent that freight forwarders and shippers constituted majority of respondents. This was because they are the main customers or clients to whom the improved systems at the ports is meant to benefit.

Data from the questionnaire concerning the role of the institutions in which the respondents work were not able to clearly distinguish their roles since most of them overlapped. For example, all shippers (imports and exports) selected import and export as their main roles, however, majority them shippers (82%) also selected freight forwarding and shipment of cargo. Hence, the researcher relied on information obtained from the interviews to clearly distinguish their main roles. The responses are indicated in Table 4.

Table 4: Summary of institutions and their roles in the cargo clearance procedure at the Tema Port.

INDIVIDUALS/ INSTITUTIONS	ROLES
Master Porter (GPHA)	Managers of the port
Shipper	Importer or exporter of cargos.
Freight Forwarder	Agents of importers and exporters
Terminal Operators	Provide space and handling services (loading, offloading, stuffing and shuffling).
Shipping Lines/Agencies	Provide ship husbandry services (loading, or offloading bunkering).
GRA- CEPS	Secure and protect state revenues (duties and taxes). Thus, enforcement and compliance of tax regime.
Security Agencies/ Companies	Ensure cargo and state security.
Ghana Shippers Authority	Protect the interest of shippers (importers and exporters)
Ministries Departments and Agencies (MDAs)	Provide quality and quantity control checks on imports and exports.

All the respondents and interviewees outlined a common process for clearing cargo at the port. The chronology of the clearance process as obtained from both respondents and interviewees were largely the same. The interviews (from GPHA, CEPS, GCNet, Shippers and Freight Forwarders) also referred the researcher to a manual on import and export published on the website of Ghana Shippers Authority. This manual outlines the official processes involved to which the respondents and interviewees collaborated. Although the processes for both procedures appeared similar, there were fundamental differences.

Interviewees from GCNet and CEPS emphasized the relevant documents required during every step of both clearing processes. CEPS officials interviewed also indicated that, as part of Ghana government's plans to enhance coordination of border management arrangements with other government agencies and fully automate Tema Port, CEPS took over the inspection of imports from the Destination Inspection Companies (DIC) in 2015.

Documents required for both clearance procedures as obtained from the respondents and interviewees confirmed information obtained from the Ghana Shippers Authority concerning the same issue as seen in Table 5.

Table 5. Stakeholders and documents required to clear imported cargo at Tema port (Ghana Shippers Authority 2017).

STAKEHOLDERS	DOCUMENTS NEEDED
Customs	Original bill of lading (B/L) Tax clearance certificate (TCC)
Shipping Agent	Attested invoice
Ghana Ports and Harbours Authority	Import declaration form (IDF)
Customs House Agent	Final classification and valuation report (FCVR)
Receipts/Delivery Service providers	Tax payers identification (TIN) number Delivery order

The interviewees also indicated that application for the required documents are now computerized. They said, one only needs to go onto the GCNet platform to procure them.

4.1.1 The Import Clearing Process

Data obtained from the questionnaires distributed, collaborated by the interviewees and confirmed by documents obtained from the Ghana Shippers Authority, revealed a carefully structured import clearing procedure. According to the respondents and interviewees, after securing the relevant documents listed in Table 5, the Customs House Agent (Clearing Agent) must proceed to following the steps below:

The first step is to send printed copies the listed of documents above to the Customs Division of Ghana Revenue Authority (CEPS) at Tema Port, depending on the country of origin for the Final Classification Valuation Report (FCVR) to be issued.

As a second step, once the Final Classification Valuation Report (FCVR) has been issued, the declaration must be sent electronically through the GC-Net to the Ghana Customs Management Systems (GCMS).

Thirdly, Ghana Customs (CEPS) will then validate the declaration by stating the duties and taxes to be paid at a designated Bank. It is imperative to note that, ECOBANK and Ghana Commercial Bank were mentioned by the respondents from Ghana Shippers Authority as the approved banks.

The bank receipt, bill of lading, attested invoice, IDF and FVCR must then be sent to a designated customs officer for verification.

Thereafter, the customs officer will proceed to release the cargo on the declaration (hard copy) and then electronically send via the GC-Net to the GCMS information that the cargo has been released.

The next step is to go to the delivery bay for cargo to be located and positioned for customs physical inspection or go for scanning.

Submit the released delivery order-DO (stamped and endorsed) and customs declaration (hard copy) to the Receipt/ Delivery Service provider/ port/ SCL and pay handling charges, rent unstuffing and reshuffling charges (where applicable) for cash delivery invoice (CDI) to be issued.

The cargo is Released from Shipping Line by submitting the Original Bill of Laden, Bank Receipt, Customs Declaration (Hard Copy), and/ or Delivery Order (relevant information typed on it by clearing Agent) and paying administrative charges and demurrage (where applicable).

The Tally Sheets or waybill will then be issued by Port/ SCL to enable the cargo to be loaded onto a truck and exit the port.

Finally, present all clearing documents to Customs at the exit gate and copies of waybill (DTS) to Ghana Ports and Harbours Authority (GPHA) Security and the Ghana Police Service detail stationed at the gate to inspect and allow exit as appropriate.

4.1.2 The Export Clearing Process

The following steps outlines the general procedure for export clearance at Tema Port. It must however be noted that, slight variations may occur with different commodities. Data on the export clearing process was obtained from questionnaires and interviews of Ghana Shippers Authority, CEPS, GCNet, Shippers and Freight Forwarders. Again, the steps below is supported by the one outlined in the export clearing process published by Ghana Shipper Authority, 2017.

First of all, details of the shipment must be provided by the shipper to the forwarder. The details include Cargo type, volume, destination, shipping line, port of loading, vessel, etc. The following items must also be submitted to the forwarder for onward submission to the Customs Excise and Preventive Service (CEPS)

- i. Packing list
- ii. Invoice showing unit price

iii. Total cost of the consignment

Secondly, the forwarder must input all previously submitted information through GC-Net

Thirdly, an application for approval to load or stuff a/ the container must be submitted to the Assistant Commissioner of CEPS.

Then the shipper (exporter) has the discretion to choose a shipping line based on their preference. Relevant details on the freight costs, transit times, etc. must be provided by the shipping line, after which a shipping note is issued.

Freight forwarder re-enters any additional information through GC-Net and prints out the declaration.

Head to the long room verification desk where a compliance officer is assigned. The compliance officer verifies the declaration and assigns an examination officer. Inspection is conducted at the loading bay by the examination officer, Narcotics board and national security, after which the container is sealed.

A waybill from the loading point and a container waybill is used for port entry and (GPHA/CEPS) at the export shed is notified. An invoice is raised for payment of handling charges and rent where applicable. This is paid at the GPHA revenue after which a shipping release is issued.

The waybills together with a photocopy of the declaration are submitted to shipping line representatives to check whether the seal and container number are the same as those on the shipping instructions/note. A shipping release is then issued.

GPHA releases the CDI (Cash Deliver Invoice). This is submitted to CEPS by the agent; CEPS subsequently write out the shipping release and refer it to the shipping line.

An invoice is subsequently raised for payment of handling charges and certificate to the shipping line. The shipping line then raises a provisional bill of lading after

certification by the forwarder or shipper. 72 hours after the vessel departure, the original bill of lading is raised by the shipping line.

The forwarder/shipper returns to CEPS for post shipment clearance. The original bill of lading is finally released to the shipper.

4.2 Challenges in Cargo Clearing Procedures at Tema Port

Out of the total number of respondents 68, representing 93%, believe that time delays are a major challenge at the port. 70 respondents, representing 96% agreed that there is bribery at the port and this negatively affects cargo clearing. Another 96% of respondents representing 70 respondents agreed that bureaucracy is also a challenge at the port. High Taxes was another option which all 73 respondents, representing 100% selected as shown in Figure 3.

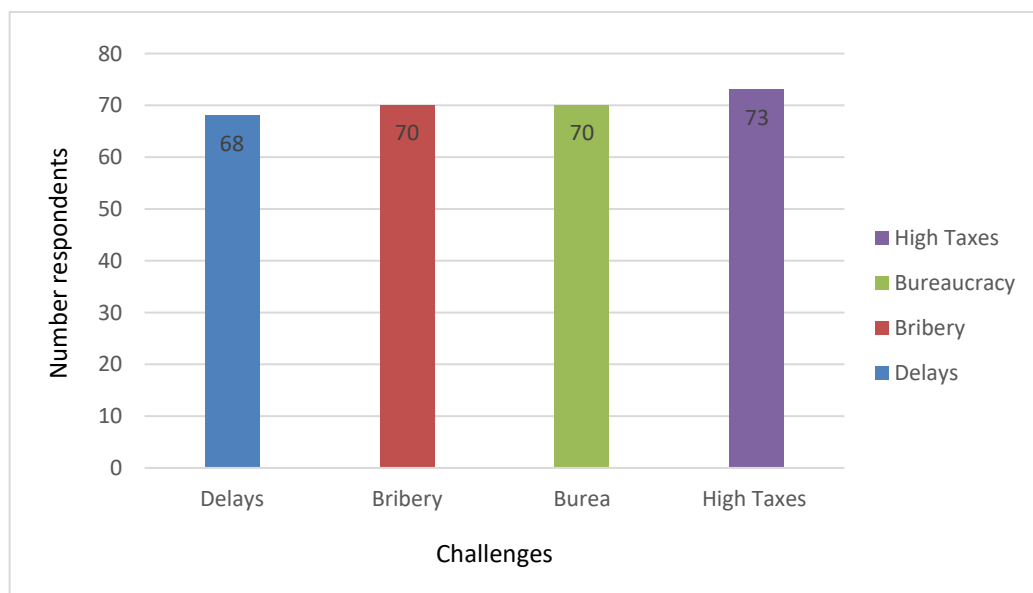


Figure 3. Challenges at Tema Port.

From the data presented it is obvious that the majority of respondents selected at least three challenges that affects cargo clearing processes at Tema Port. Although all the options were selected, bureaucracy, bribery and high taxes were the most dominant challenges identified. It can also be inferred that, the problems of delays,

bribery, High Taxes have not been eliminated by the introduction of the so called paperless system (GC-Net). Challenges related to bureaucracy are also persistent.

During the interview sessions with participants from agencies at the port (namely CEPS, Shippers Authority, Terminal Operators, Shipping Lines, and State Security at the port amongst others) it was released that, based on their roles they indicted other stakeholders, including shippers (importers and exporters) as causes of the challenges in the system. Table 6 indicate the challenges as professed by the interviewees.

Table 6. Summary of other challenges at Tema Port.

Individual/ Institution	Challenges
Shippers (Importers and Exporters)	Constant request for submission of photocopied documents by institutions.
Terminal Operators	Shippers failure to promptly clear and pick-up their cargo from the terminal.
Shipping Lines/ Agencies	Inability of shippers to make prompt payment for the cargo release thereby causing accumulation of high demurrage charges.
GRA- CEPS	Non-Disclosure, under-invoicing and misclassification of cargos (Customs Harmonized code- HS code)
Security Agencies/ Companies	Cargo theft and pilfering at the ports/ terminal.
Ghana Shippers Authority	Indiscriminate and illegitimate charges levied shippers by other stakeholders in the industry
Ministries Departments and Agencies	Non-compliance with quality and quantity control standards by shippers

All the respondents and interviewees representing 100% were firmly aware of the automated port system at Tema. The interviews revealed that several workshops

and seminars were organized prior to the introduction of port automation systems in 2002. It can therefore be deduced that, the introduction of port automation has been well advocated on to the relevant institutions and agencies directly or indirectly linked to port operations, thereby making them aware of its existence and operation.

4.3 Impact of Port Automation on Cargo Clearing at Tema Port

Data obtained from the respondents including shipping agents, freight forwarders and shippers indicates that documents covering shipments for clearance have reduced as a result of the computerization of the submission process. They contended that, previously they had to queue at the beginning of the process to physically obtain or submit duplicate of documents to different government and revenue agencies to obtain clearance. However, with the computerized system (GCNet) the documents gets to the various relevant agencies with a click of a computer button.

The respondents were however, bemoaned by the fact that the automated system has only transferred the queuing to the end of each step of the process. This, they explained, was because photocopies of documents submitted online had to be resubmitted to the same agencies at each turn of the clearing process. This added cost and undue delays to their operation.

In the process of documentation, authentication by way of signatures is very integral. The respondents who were mostly made up of shipping agents, shippers, freight forwarders and clearing agents said that the number of signatures required has reduced marginally because of the submission processes.

While the cumbersome nature of the process has been reduced, the constant demand for copies of documents already submitted is creating a major challenge for the freight forwarders. This situation, as stated earlier, had led to delays at the end or submission stage of the process.

Respondents from Ghana Revenue Authority-CEPS were impressed with the automated system. They were of the view that, the automation of the port has led to

efficiency of their tax collect rates. They however were quick to point out that some customers still try to outwit the system although they are mostly not successful. Freight forwarders, shipping agents and shippers on the other had pointed to some CEPS officials and operators of the port as conniving with some dishonest people to circumvent the system, thereby leading to loose of tax revenues.

It was apparent that it took 11 to 21 days to clear goods or cargo at the port before the port automation. This is as a result of the number of respondents who selected that option as seen in Figure 4.

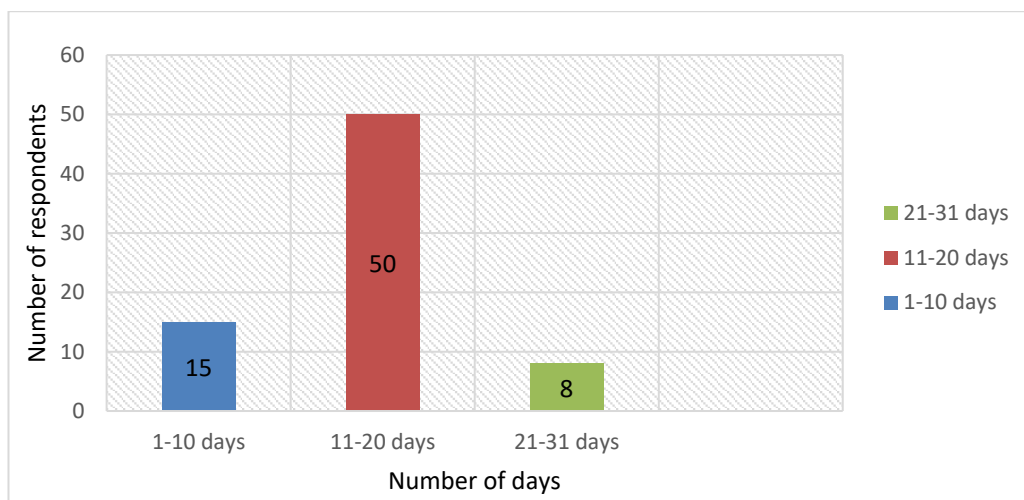


Figure 4. Duration for cargo clearing before automation.

It was noted that generally it took between 1 to 20 days to go through all the processes of clearing cargo at the port after the automation at the port. This is evident in the number of respondents who selected 1-10 days and 11-20 days to clear their cargo as seen in Figure 5.

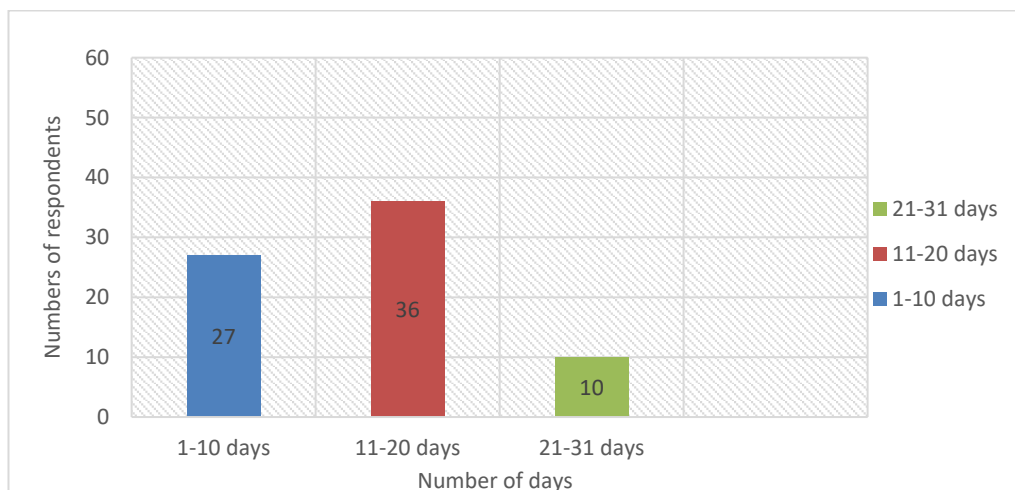


Figure 5. Duration for cargo clearing after automation.

The interviewees (freight forwarders) were of the view that, one of the major challenge facing freight forwarders with regard to port automation is the constant request for photocopies of documents. Documents completed and submitted online are resubmitted manually (hardcopies) to the same institutions as a system of validation. The Freight forwarders see this challenge as an opportunity for the agencies involved to extort money from them rather than validation. They also view it as a time wasting process since the softcopies of the documents are already with the relevant authority.

When asked about their views on the impact of port automation on stakeholders in cargo clearing industry, all the respondents and interviewees agreed that the port automation/GCNet has reduced the problem of time spent and stress of waiting in long queues to process documents, they were quick to point out that the issue of submitting photocopies of documents completed online at every turn of the process is erasing all the gains earlier made. The cost of making photocopies and queuing to submit hardcopies of the same documents completed and submitted online is having a great impact on their operations. They equated it to repetition of the same process.

The shipping lines/ Agencies shared the view that when there is a delay in the processing of documents (waybill, payment at the back, etc.) to enable the terminal operators to offload cargo from the ships, they are forced to pay

exorbitant penalties for the extension of their bunkering time after the expiry of their allotted docking period. This extra charges are then surcharged the shipper thereby increasing the cost of clearing cargo at the port.

Officials of Ghana Revenue Authority- CEPS explained that the challenges of non-disclosure, under invoicing, misclassification of cargo is leading to the state losing millions of cedis due to taxes evasion.

The interviewees were of the view that the role of the MDAs like Ghana Standard Board, Food and Drugs Board, Narcotics Control Board and Environmental Protection Agency amongst others are critical to state security and safety. Therefore if the problems enumerated in Table 6 can lead to illegal drugs and substandard products coming into the country, hence putting the life of citizens at risk.

5 SUMMARY, CONCLUSIONS & RECOMMENDATIONS

This chapter summarizes the findings of the research, conclusion as well as recommendations were made based on the results of the data analysis by both the respondents and the researcher. Possible future research suggestions will be stated in this chapter as well.

5.1 Summary of Findings

The following findings were made after the analysis of data obtained from the respondents.

Port automation is currently been implemented at Tema Port and it was quite obvious fact it started in 2002. There is a properly laid down procedure for clearing cargo (imports and exports) at Tema Port. This process as identified from the data collected is well known by all stakeholders in the cargo clearing industry. Adequate advocacy was also made to create awareness prior to the introduction of the port automation.

Although the automation of Tema port was meant to increase efficiency and reduce wastage and negative practices, a number of challenges are affecting the smooth running or implementation of the relatively new system. Some of them are the constant demand for submission of photocopies of documents that have already been submitted to the same institution online. Another is the limited number of officially allocated banks where payment are made. This also leads to time delay. The problems of time delay, bribery and bureaucracy still persist even after the introduction of the port automated procedures. This particular set of problems is persisting because of the human intervention that still exist as a result of the need to submit photocopies at the turn of each step in the clearing process.

The impact of the challenges identified are far reaching. It stretches from high port and clearing cargo charges, time delays due to repetition of some processes (resubmission of softcopy documents manually, tax evasion, and possible clearing of illegal or substandard products.

5.2 Recommendations

This section highlights some recommendations for improvement of the GCNet system so as to ensure an effective and efficient management of the system by port officials and customs operations in the country.

Processes of port clearance and procedures at the Tema port should be streamlined and simplified using a specific computerized system whereby all payments and clearing processes involving all agencies would be managed at one location. This would save time and reduce the number of days for clearance of goods at the port and of course at the same time a reduction in the steps involved in the clearance process will reduce the intake of bribes paid to the customs and other officials at the port.

The various stakeholders such as CEPS, and other regulatory agencies with regards to port operations and custom clearance procedures should be given the necessary orientation about procedures involved in clearing goods at the port. Similarly, staff training and recruitment will need to be reviewed extensively. Teams will be required to be efficient on post clearance inspections on customs procedures that will depend on fast clearance and least physical and document inspection. In addition, the public education can be done by the shippers' authority and Ghana community network services limited in collaboration with the media; to educate importers, exporters and clearing agents on the procedures and fees to be paid at the ports. This will prevent customs officers and other port officials from taking unnecessary charges from them.

In addition, features of the GCNet system can be improved so as to facilitate smooth operations of the clearing system. Major concerns were that most users of the system face challenges such as correcting mistakes when using the GCNet system. Emphasis should be made on the improvement of the features of the GCNet nonetheless, users of the system should be educated on the use of specific features to help overcome the difficulties encountered as well as help in the reduction of corruption. The views of the various users of the system need to be reexamined to enhance the usability of the GCNet.

Waybills can be issued by the GPHA electronically and by so doing convince the Shippers association to dole out the obligation of shipping information submitted by carriers manually that is already in the manifest forwarded to the electronically. This will prevent delays since the manual process will take days or even weeks to process. Other agencies such as the VAT services and IRS should be prepared to use the data provided by GCMS since they are already connected to the system. This will involve streamlining and of course, the data can be useful in auditing their own work.

The Ghana Community Network Services Limited has single-handedly been managing the GCNet system for a while now since its introduction in the area of ports and customs development. Other agencies and training communities such as CEPS and stakeholders should also be part of the GCNet community and also capitalize on the opportunities the GCNet presents for an efficient port development and customs operations in Ghana. Notwithstanding, it is commendable that some staff of agencies like CEPS are receiving equal access and training under government's contract agreement with GCNet system to help in the smooth operations at the port.

Since the introduction of the GCNet in 2002, it has benefited the economy of Ghana and the general public, but despite the benefits of the system very few Ghanaians really understand or have the knowledge of its operations and how it works. An encounter with an importer at the port indicates how ignorant the public is about the system, "what automated system? If there is any automated system then I do not think it is in use" these are the words of the importer. There is, therefore, the need for structures to be put in place to educate the public on the use and benefits of the GCNet systems.

5.3 Conclusion

The research which seeks to evaluate port automation at the port of Tema since its introduction in 2002, its impact on custom practices and port operations and the effects of the automated system on imports and exports. It is undeniable that the introduction of port automation has improved the services at the port of Tema. This

research focused on the role of port automation, custom procedures, clearance processes, and documentation before imports and exports. Challenges faced by various stakeholders as well as challenges of the automated system were reviewed.

The introduction of port automation and GCNet has led to more simplified trade facilities and reducing the time delays on freight documentation and clearance processes. After the introduction of the GCNet, clearance processes and documentation have been streamlined since most of the documents are submitted electronically as compared to the old system where all documents were submitted manually. The implementation of the GCNet is to make operations more efficient and accurate. It is when all stakeholders involved, are committed to the action to deliver and manage the system effectively will there be smooth operations at the port.

Finally, the recommendations given, if implemented by the various stakeholders agencies and institutions involved will produce effective results at the port. The government on the other hand should enforce rules and laws to make sure all stakeholders, agencies, and institutions adopt the GCNet system to ensure smooth operations at the port.

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APPENDIX 1.

QUESTIONNAIRE FOR IMPORTERS

EVALUATING THE AUTOMATED CLEARING SYSTEM AT GHANA'S PORT: IT'S IMPACT ON EXPORT AND IMPORT (A CASE STUDY OF TEMA PORT)

This is a study which seeks to find out the impact of Ghana's automated port systems on her imports and exports. Please tick the appropriate box or provide answers to the spaces provided. Your responses will be treated as confidential and used only for research purposes. Your identity is not required hence respond to the items as truthfully as possible.

SECTION A

BACKGROUND INFORMATION

1. Name of institution/Company of work:

2. What is your position:

3. Where is your institution located?

a. Inside the port ☐

b. Outside the port ☐

4. What is the role of your institution in port operations at the Tema Port?

a. Export and import

b. Shipment

c. Freight forwarding

d. Clearance of goods

e. If other, please specify

5. List the general steps/processes involved in importing goods at the Tema port

A:

.....

....

B:

.....

....

C:

.....

.....

D:

.....

.....

E:

.....

.....

SECTION B

CHALLENGES IN PORT OPERATIONS SYSTEMS

6. What challenges do you face during the clearing process at the port? Tick [✓] where appropriate:

Time Delay ☐ Bribery ☐ bureaucracy ☐ High Charges/Taxes ☐

7. Indicate any other challenges faced at the port:

.....

.....

.....

.....

8. Are you aware of port automation at the Tema port?

a. Yes ☐

b. No ☐

8a. If NO, what port clearing system are you aware of at Tema port?

.....

9. How has port automation affected your shipment for the last 12 months?

.....

10. On the average how long did it take to clear goods from the port before port automation in 2002?

- a. 1-10 days ☐
- b. 11-20 days ☐
- c. 21-31 days ☐
- d. Other, please specify:

11. On the average how long does it take to clear goods from the port after port automation in 2002?

- a. 1-10 days ☐
- b. 11-20 days ☐
- c. 21-31 days ☐
- d. Other, please specify.....

12. Is there any congestion at the Tema port presently?

- a. Yes ☐
- b. No ☐

13. How would you describe the nature of congestion prior to port automation in 2002?

- a. Everyday
- b. 1-2 times per week
- c. 1-2 times in a month
- d. 1-2 times in a year

14. To what extent will you agree that, the introduction of port automation has made import and export processes reliable?

- a. Strongly Agree ☐
- b. Agree ☐
- c. Neither agree ☐
- d. Disagree ☐
- e. Strongly disagree ☐

15. What are the challenges facing importers and exporters with regards to port automation?

.....

16. What in your view is the impact of port automation on your business as an importer?

.....

APPENDIX 2.

QUESTIONNAIRE FOR FREIGHT FORWARDERS

EVALUATING THE AUTOMATED CLEARING SYSTEM AT GHANA'S PORT: IT'S IMPACT ON EXPORT AND IMPORT (A CASE STUDY OF TEMA PORT)

This is a study which seeks to find out the impact of Ghana's automated port systems on her imports and exports. Please tick the appropriate box or provide answers to the spaces provided. Your responses will be treated as confidential and used only for research purposes. Your identity is not required hence respond to the items as truthfully as possible.

SECTION A

BACKGROUND INFORMATION

1. Name of institution/Company of work:
2. What is your position:
3. Where is your institution located?
 - a. Inside the port ☐
 - b. Outside the port ☐
4. What is the role of your institution in port operations at the Tema Port?
 - a. Export and import
 - b. Shipment
 - b. Freight forwarding
 - c. Clearance of goods
 - b. If other, please specify
5. List the general steps/processes involved in exporting goods at Tema port:
 - a.
 - b.
 - c.

d.

d.

SECTION B

CHALLENGES IN PORT OPERATIONS SYSTEMS

6. What challenges do you face during the clearing process at the port? Tick [$\sqrt{}$] where appropriate:

Time Delay ☐ Bribery ☐ bureaucracy ☐ High Charges/Taxes ☐

7. Indicate any other challenges faced at the port:

.....

8. Are you aware of port automation at the Tema port?

c. Yes ☐
 f. No ☐

8a. If NO, what port clearing system are you aware of at Tema port?

.....

9. How has port automation affected your shipment for the last 12 months?

.....

10. On the average how long did it take to clear goods from the port before port automation in 2002?

a. 1-10 days ☐
 b. 11-20 days ☐
 b. 21-31 days ☐
 c. Other, please specify:

11. On the average how long does it take to clear goods from the port after port automation in 2002?

a. 1-10 days ☐

- b. 11-20 days ☐
- c. 21-31 days ☐
- e. Other, please specify.....

12. Is there any congestion at the Tema port presently?

- b. Yes ☐
- c. No ☐

13. How would you describe the nature of congestion prior to port automation in 2002?

- e. Everyday
- b. 1-2 times per week
- c. 1-2 times in a month
- b. 1-2 times in a year

14. To what extent will you agree that, the introduction of port automation is reliable as a freight forwarder?

- c. Strongly Agree ☐
- e. Agree ☐
- b. Neither agree ☐
- c. Disagree ☐
- f. Strongly disagree ☐

15. What are the challenges facing freight forwarders with regards to port automation?

.....

16. What in your view is the impact of port automation on your business as a freight forwarder?

.....

APPENDIX 3.

INTERVIEWER'S GUIDE FOR GPHA, GCNet, GCB, ECO-BANK, CEPS, GIFF AND FREIGHT FORWARDERS

EVALUATING THE AUTOMATED CLEARING SYSTEM AT GHANA'S PORT: IT'S IMPACT ON EXPORT AND IMPORT (A CASE STUDY OF TEMA PORT)

This is a study which seeks to find out the impact of Ghana's automated port systems on her imports and exports. Please tick the appropriate box or provide answers to the spaces provided. Your responses will be treated as confidential and used only for research purposes. Your identity is not required hence respond to the items as truthfully as possible. Thank you.

SECTION A

BACKGROUND INFORMATION

1. Name of Institution
2. Date of interview
3. What is your position?
4. Years of working experience
5. Where is your institution located?
6. What is the role of your institution in port operations at the Tema Port?
7. What are the processes involved in executing your company's role in port operations at the Tema port

SECTION B

CHALLENGES IN PORT OPERATIONS SYSTEMS

8. What does the concept of port automation mean at the port?
9. How has port automation affected shipment and clearance of goods for the last 12 months?
10. What are the custom clearance procedures at the port?
11. How long did it take to clear goods from the port before port automation in 2002?

12. How long does it take to clear goods from the port after port automation in 2002?
 13. What are the challenges facing clearance process at the port of Tema?
 14. What can be done to improve the clearance processes at the port?
- .